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AN ALTERNATIV DEFENSE PLAN FOR WESTERN EUROPE

Two articles by Bent Sørensen:

1. European Defense: Bridging the Gap
2. Defense alternatives for Western Europe

Peace Research series no. 3

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### Abstract

#### PROPOSED DEFENSE PLAN:

1985-1995: Western Europe unilaterally removes land-based and tactical nuclear weapons, and agrees on the operation of a common strategic nuclear force placed on submarines.

1995-2001: The Warsaw Pact in response removes its tactical and intermediate range nuclear weapons from the European scene, and a transformation of West European forces into a non-offensive area defense is initiated.

2001-2009: Negotiations on the removal of all nuclear arms are undertaken, with participation of all nuclear powers, and an agreement is finally reached.

2009-2015 and beyond: Negotiations on total disarmament are initiated, involving more and more of the worlds nations. Stepwise arms reductions in all areas of weaponry is the result one hopes to see emerge...

#### THE AUTHOR:

Bent Sørensen is professor of physics at Roskilde University Center, Denmark. He took his Ph.D. from the Niels Bohr Institute at University of Copenhagen, and over the years he has worked in nuclear and environmental sciences, energy planning and renewable energy system design, while maintaining a strong interest in defense and security questions. He has held positions at NORDITA (Copenhagen), Yukawa Institute for Fundamental Physics (Kyoto), Lawrence Radiation Laboratory (Berkeley), Yale University (New Haven), Niels Bohr Institute (Copenhagen), CNRS and University of Grenoble, and SERI (Golden). A keen interest for communicating research issues to a wider audience has resulted in a number of books, ranging from popular ones to textbooks and research monographs. Recent authorship and coauthorship include Renewable Energy and Fundamentals of Energy Storage.

Bent Sorensen

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**EUROPEAN DEFENSE DEBATE:  
BRIDGING THE GAP**

A number of alternatives to the current West European defense posture has been proposed. The proposals have come from military and academic circles, as well as from political parties and peace movements. The common aim of all the proposed policies is to improve security against destruction and coercion caused by foreign powers. Although the different proposals may appear irreconcilable, I shall argue that there exists a stepwise policy which may satisfy the most important demands made by the different groups and avoid the problems that each group sees in the proposals made by others.

The peace movements want Western Europe to renounce on all nuclear weapons, and to form a non-offensive, conventional defence, if any. Military proposals call for a stronger conventional defense and new, sophisticated conventional weapons, while maintaining or increasing the nuclear arsenals. Between these extremes are proposals for strategy change, such as the "no first strike" campaign, and specific suggestions such as changing the conventional posture from the current forward defense to a territorial one, and creating limited nuclear-free zones. Furthermore, there are political ideas of decoupling Western Europe from the arms race of the superpowers, for example by basing a European defense union on the deterring effect of an upgraded French nuclear force extending its umbrella to other West European nations.

The proposed defense alternatives have all been criticized, and I shall briefly mention some key objections. The most radical alternative is one of completely renouncing on nuclear weapons and of transforming the conventional

defense into some sort of civil defense. This would make attack easier, but it is argued that the money saved by not having to maintain a Military defense could be spent on international conflict prevention. As a result, aggressive intentions are believed to diminish. Against this speaks a lot of historical evidence: Weakness invites interference and attempts of coercion, and should submission not materialize, invasion and occupancy may follow. This is usually acknowledged by proponents of demilitarization, and schemes of civil disobedience are conceived for dealing with an occupying power. The idea is obviously "rather red than dead", since the security against nuclear destruction will be high, but the security as regards foreign interference low. As a unilateral measure, the scheme of demilitarization is obviously lacking, because it does not satisfy the overall security aim, which is security against both destruction and foreign coercion.

A less extreme proposal is to abandon nuclear weapons unilaterally and to modify the conventional forces to become "non-offensive". The definition of a "non-offensive" weapon is not entirely clear, but it would seem to involve characteristics such as short range and low mobility. Most weapons can in principle be used both for attack and defense, so the distinction is one of degree. One way of determining if a given posture is offensive or not would be to ask the opinion of potential aggressors. However, their evaluation might depend on whether they hold aggressive intentions or not. The fundamental criticism against a defense posture based on a non-offensive, conventional force and without nuclear arms is, that it does not prevent an

enemy from using nuclear weapons, if he has them. Should an aggression take place, but the conventional defense against it prove effective, then it would be tempting for the aggressor to settle the fight by use of nuclear weapons, or by ultimative threats of using them.

One could envisage a non-offensive, conventional force backed by a minimum size strategic nuclear deterrent. This would make it impossible for an enemy to use nuclear blackmail to reach his objective. However, the notion of a non-offensive, conventional force may still be unclear, because no experience exists with such a defense. If it means having conventional wars on one's own territory rather than at its boundaries, it is likely to have a negative influence on the security against civilian destruction and casualties, and if the potential opponent continues to possess an offensive and possibly superior conventional force, then it is hard to see any advantage in making one's own forces less offensive, unless of course the opponent sees an imminent risk of us invading his territory. At present, it appears that the Soviet Union is less worried about the offensive nature of Western conventional forces than about the upgrading of offensive nuclear weapons. Yet, if a mutual decrease in the risk of a nuclear exchange can be achieved, then a closer look at the concept of a less offensive conventional posture seems worthwhile.

The present arsenals of nuclear weapons go far beyond the minimum required for deterrence. Indeed, nuclear weapons with a range of different specifications and possible uses are integrated at all levels of NATO defense. This is a result of the "flexible response" doctrine, which has



prevailed in NATO planning for the last twenty years. It calls for the ability to meet any kind of and combination of aggressions with a measured response, and to be able to control escalation with any conceivable stepsize. The nuclear weapons associated with this doctrine comprise tactical battlefield weapons, intermediate and long range nuclear arms deployed on land, on surface ships and submarines, and on many types of aircrafts.

Many West European observers see the doctrine of flexible response as reflecting the interest of the United States in attempting to confine a nuclear war to the European "theater".<sup>1</sup> Although the Soviet Union has denied such a possibility, it is not difficult to construct war scenarios in which such a limited nuclear war would offer advantages to the Soviet Union as well as to the United States. The presence of theater nuclear arms is thus seen as associated with a lowering of West European security, and it is natural to ask, if these weapons serve any useful purpose.

It is a Western (and originally European) tradition to assume certain rules for the conduct of war, for example making a declaration of war and renouncing on "unfair" weapons. The United States and NATO seem to continue this tradition, as evidenced by their war models and strategies. The picture of a Soviet attack on Western Europe is one of slowly escalating stages: First the Soviet will invade Germany using only conventional forces. NATO will respond in measure and is supposed to have time (nearly a week) to call in reinforcement from the U.S. Then, if the Soviet Union does too well, the West will start to use tactical nuclear weapons, and if the Soviet Union does so too, NATO will

escalate to the use of intermediate range nuclear missiles against command and control facilities far behind the zones of combat. Following this, further steps of escalation may include demonstration use of strategic nuclear bombs against enemy cities and ultimately all-out strategic war. Key phrases used to describe the assumed strategy are "measured response" and "ability to fight protracted nuclear wars".

But suppose the enemy is not willing to play by these rules? If the Soviet Union ever decides to attack Western Europe, it will very likely be as a result of a desperate situation where it sees no viable alternative. Europe being one of the most heavily armed regions in the world, the chances of success in a limited attack (such as a purely conventional one) are highly uncertain. If the Soviet Union considers itself forced to attack, it will surely use every means at its disposal to ensure the quickest possible achievement of its objective, whether it be occupation or destruction of Western Europe.<sup>2</sup> The tactical nuclear arms of the Soviet Union are as integrated with the conventional forces as those in the West, and they have a much higher megatonnage. I believe that they would be used in the earliest possible phase to hit Western command and control facilities, as well as time-urgent military targets including nuclear arms depots and facilities for receiving Transatlantic reinforcement. Combined with an all-out air and land attack, the Soviet Union would hope to have destroyed or occupied all of Western Europe, before any reinforcement could arrive, and it would then be able to ask the United States to accept the situation in return for avoiding a strategic exchange between the two superpowers.<sup>3</sup>

If the above is a realistic description of the threat facing Western Europe, then serious questions must be raised against the Western force posture demanded by the doctrine of flexible response. Tactical nuclear arms on West European soil can only speed up its destruction, and strategic arms under U.S. control cannot be counted on to deter the Soviet Union or to actually become released early in a European conflict, due to the U.S. acceptance of limited war concepts.

## II

From a West European point of view, a sensible response to this analysis would be A) to renounce on weapons which aim at reducing Soviet security, and B) to contemplate the formation of an independent, West European strategic deterrence force, specifically dedicated to be used in case of an uncontrollable Soviet attack on Western Europe.

Recent NATO defense decisions to deploy Pershing 2 and cruise missiles in Western Europe and to prepare for "deep strike" attacks on Soviet follow-on forces can well be construed as directly aiming at reducing the security of the Soviet Union. The experience of the last thirty years ought to have taught us, that the Soviet Union cannot be deterred by measures which lower its level of security. Soviet leaders will make any sacrifice to "catch up", and the risk of bringing them in a situation, where they think a war with the West is unavoidable, increases with each such measure. As argued above, this will increase the risk of West European destruction, and thus our attempts of improving our security have lead to the opposite effect.

An obvious alternative is to look for measures, which will improve our security without deteriorating that of the Soviet Union. Such considerations have clearly been absent in previous NATO planning as well as in recently proposed plans for raising the nuclear threshold.<sup>4</sup> It follows from the discussion above, that removal of battlefield and medium range nuclear weapons from the West European **territory** will indeed improve the security of both the Soviet Union and of Western Europe. However, giving up tactical nuclear weapons by a unilateral step, while the other side still has them, is feasible only as long as a sufficient strategic nuclear deterrent is available.

Uncertainty concerning the availability of U.S. strategic arms in a European conflict (say a non-nuclear attack in which the Soviet Union does too well) makes it natural to combine the formation of a nuclear-free zone comprising all of Western Europe with the establishment of an independent West European strategic nuclear deterrent force. In fact, the existing such force - owned by France and the United Kingdom - may be sufficient in magnitude to be able to inflict unacceptable damage to the Soviet Union and whatever other aggressor one might consider. The idea that these national weapons should assume a common West European role may not be so far fetched, because discussions on the extension of the French nuclear umbrella to West Germany have already started.<sup>5</sup> The independent West European strategic force would continue to be submarine-based, so that not only land-based, but also air-launched nuclear weapons could become eliminated and with them the majority of targets which might invite the opponent to use nuclear

weapons. The largest problem for a common West European nuclear defense is the coordination of decisionmaking. During a conflict, there will hardly be time for complex negotiations between the individual nations, so it is important, that clear rules exist concerning the conditions under which the common strategic nuclear arms should be released. A similar but even more complicated problem exists with today's variety of nuclear arms in Western Europe. The strategic submarine-based weapons would be targeted on enemy resources (including leadership, population and industrial centers), and should be released if a conventional attack on Western Europe by the Soviet Union cannot be stopped, or if the Soviet Union uses nuclear arms against Western Europe.

The security implications for Western Europe are definitely positive, if the present nuclear arsenal assigned to a European role - but largely owned by the United States - is replaced by a submarine-based strategic nuclear deterrent force under West European control. Let me look separately at the risk of nuclear destruction and that of Soviet invasion and occupation. The present reliance on tactical nuclear weapons and intermediate range nuclear missiles capable of reaching Soviet territory in few minutes makes nuclear destruction of Western Europe practically certain in any major armed conflict with the Soviet Union. As stated above, the Soviet Union is likely to seize the initiative with a full-scale nuclear attack, as soon as it thinks that a confrontation is unavoidable. There is no advantage associated with this type of behavior, in case Western Europe has removed its theater nuclear weapons, so the risk of a full-scale Soviet nuclear attack resulting

from such judgement (or mis-judgement) of the situation is greatly reduced. Furthermore, the intentions of the Soviet Union to engage in a nuclear war with Western Europe, which even at present must be considered as very small, will further diminish, when Western Europe by creating a nuclear-free zone on its territory has signaled its lack of intentions to attack the Soviet Union.

While a nuclear exchange would render the West European territory uninteresting for a long while, one might envisage a Soviet occupation with use of conventional forces. An invasion attempt would be met with the same Western conventional response as today, and the success of a Soviet invasion would be as uncertain as it is at present. The difference is the absence of the possibility of a gradually escalating use of theater nuclear arms, in exchange for presenting the aggressor with the certainty, that if he proceeds too far, a strategic nuclear retaliation will become released upon him. The Soviet Union would not know the precise criterion, and would be deterred - in the first place from starting an invasion, and once attempted - from carrying it further than the border area. Thus West European security with respect to Soviet occupation would also be improved by the suggested policy.

Finally one may consider, whether or not the altered policy has any effect on the risk of Soviet interference and coercion by non-military pressure or threats. Since there is no increase in the real risk, the West European countries should be able to take a firm stand against any attempt of coercion. To this end, one may note that by agreeing on common management of the independent nuclear deterrent

force, Western Europe would have gained considerably in political strength, and would be able to negotiate with the Soviet Union from a much better position than the present one of ever lurking disunion. The one arguable point in the new policy is if the Soviet Union could get the idea that Western Europe might after all hesitate to use its nuclear deterrent force in an actual situation of Soviet aggression. It is for this reason that the rules for release of the strategic nuclear missiles must be predetermined (although not necessarily revealed to the Soviet Union), and the release must be made with a substantial degree of automaticity.

### III

The policy outlined above does not satisfy the demands of all the groups contributing to the European debate, because it still relies on an ultimate nuclear deterrent. A substantial minority would prefer foreign occupation to any use of nuclear weapons. In my view, renouncing on nuclear weapons could become a majority-endorsed point of view, if the conditions for abandoning nuclear weapons could be created without jeopardizing security during a transition period. The policy of unilaterally removing tactical and medium range nuclear weapons while forming a more credible strategic nuclear umbrella for Western Europe may be the first step on the road to total nuclear disarmament. Given the improvement of not only West European but also of Soviet security entailed by this unilateral step, it is to be expected, that the Soviet Union will respond by similarly removing its tactical and intermediate range nuclear weapons

directed against Western Europe. If it did not do so, the Soviet Union would have exposed itself as holding aggressive intentions and as being massively untrustworthy in its no-first-use pledges.

It is therefore of interest to consider the possible next steps after a reciprocated removal of theater nuclear weapons from all of Europe. In viewing the conventional force postures remaining in that situation, both sides appear unnecessarily offensive. The offensive postures associated with the Western deep strike capability and the Soviet rapid retaliation or preventive attack preparations are motivated by the need to rapidly destroy enemy command and control centers, as well as nuclear weapon deposits, and in the Western case also by the need to stop an invading force as early as possible. Much of this offensive posture should thus be reevaluated in a situation with no theater nuclear arms. Each side could gain security by making its posture less offensive, because that would reduce the chance of bringing the other side to doubt whether the actual intentions are to attack or to defend. It is possible that mutual modifications of the conventional force structure could be negotiated (including the question of reducing Warsaw Pact numbers of soldiers and tanks). The formation of a nuclear-free environment might have created a positive climate for negotiated reductions in offensiveness, but a number of changes would be warranted already as unilateral measures, because they would improve security without reducing that of the other side.

Among the proposals made for a non-offensive West European defense<sup>6</sup>, the most realistic one is in my view an area



defence based on precision guided weapons of modest mobility. The mobility should be low, in order that the posture cannot become construed as offensive, but there should be some mobility, in order that one may chase an invading force and drive it back. Since warfare would be conducted on one's own territory, it is important that high precision is associated with all weapons, so that they can surgically destroy enemy resources with the lowest possible collateral damage.

One argument against forming a territorial defense unilaterally is, that the enemy may use weapons of longer range to inflict any amount of damage from a "safe" distance. The possession by Western Europe of a strategic nuclear deterrent force may to some extent deter the enemy from such action, but the credibility of this deterrence would be low unless the damage inflicted by the aggressor rose towards unacceptable levels. A negotiated arms agreement which banned offensive (mobile or long range) weapons on both sides would avoid this credibility problem and would clearly add to the security of both sides.

#### IV

Assuming now that the nuclear-free zone in Europe has been created and the conventional forces have been made non-offensive, then the next step would be to get rid of the remaining nuclear arms, that is the strategic nuclear deterrent force. Such a step could hardly be taken unilaterally by Western Europe without serious security problems. On the other hand, negotiations cannot be conducted just between Western Europe and the Soviet Union,

because the Soviet strategic nuclear weapons have important functions outside Europe. At this stage, complete nuclear disarmament is the goal, and thus all nuclear powers must participate in the negotiations. The United States and China are both important counterparts in the Soviet nuclear strategy. The U.S. could hardly have any objection to total nuclear disarmament, since it is not threatened by conventional forces of any other nation. China would be likely to prefer a stepwise removal of nuclear arms, coupled to a modification of its conventional forces and those of the Soviet Union into a non-offensive posture, based on an agreement similar to the one assumed to have been reached between the Soviet Union and Western Europe. Although the emphasis in my discussion has been on European security options, moves towards a stepwise disarmament could simultaneously have been taken in other regions of the world. Still, the question of battlefield nuclear weapons does not at present have as much urgency anywhere else as in Europe.

Should a negotiated forsaking of all nuclear arms materialize, and the non-offensive, conventional forces become a reality throughout the regions mentioned, then a final disarmament step would be a move towards the non-military defense suggested by part of the peace movement. The condition for this to become a realistic proposal is global acceptance. This means acceptance by Third World countries and present troublespots, e.g. in the Middle East. Peace in the Third World requires non-interference by power blocks, as well as the removal of economic reasons for conflict, that is formation of

non-exploitative trade relations and solidaric knowledge transfer. It is clear that such policies may cost the industrialized countries as much as their current military defense. However, it is not certain that economic commitment to these policies will be sufficient to create a peaceful world. Many armed conflicts have reasons involving historical and normative factors which are almost impossible to deal with by the international society, at least on a short time scale. While the preceding chain of disarmament steps could be envisaged to take place over a few decades, the last step of total demilitarization is likely to have a time frame measured in hundreds of years.

The important thing is, that there exists a process, which step by step leads from the present situation of acknowledged low security, over intermediate situations of greatly improved security for everyone involved, to the final goal of a humane human society. I have further argued that Western Europe has the possibility to start this process by taking the first step unilaterally, without any interim decline in its security.

NOTES:

1. See for example Rudolf Steinke, "The Security Debate in West Germany Today", END Papers 6, Winter 1983-84, pp. 22-40

2. This element of Soviet strategy is stressed by Joseph Douglass in his "Soviet Military Strategy in Europe", New York: Pergamon Press 1980, and in several contributions to the survey "Soviet Military Thinking" edited by Derek Leebaert, London: George Allen & Unwin, 1981.

3. Henry Kissinger sees this possibility in "NATO Defense and the Soviet Threat", published in Survival, November/December 1979, p. 266. It is further discussed by Robert McNamara in "The Military Role of Nuclear Weapons: Perceptions and Misperceptions", Foreign Affairs, Fall 1983, pp. 59-80.

4. E.g. Bernard Rogers, "The Atlantic Alliance: Prescriptions for a Difficult Decade", Foreign Affairs, Summer 1982, pp. 1145-1156. General Rogers' proposal has received support from the European Security Study, "Strengthening Conventional Deterrence in Europe", London: McMillan Press 1983, and from Robert McNamara, op. cit. A military implementation of Rogers' ideas may be seen in the U.S.-West German joint statement entitled "AirLand Battle 2000". Most of this document is unclassified (West German Army Inspectorate, 1983).

5. Helmut Schmidt proposed an automatic release of the

French strategic nuclear weapons by attack on either West Germany or France (H. Kaufholz, "French nuclear umbrella over West Germany", Politiken, June 30, 1984). In return West Germany would boost its conventional defense, so that the two countries alone could withstand a conventional attack by the Soviet Union. In this way, there would be no need for the United States or other nations to maintain forces or weapons in West Germany. The Schmidt proposal has been the subject of talks between French and West German leaders Mitterand and Kohl. The question of whether an independent West European nuclear force would violate the Nuclear Proliferation Treaty is discussed by Daniel Charles and David Albricht in "Europeanization of NATO", Bulletin of the Atomic Scientists, November 1984, pp. 45-46. They point out that all parties to the treaty already seem to accept that non-weapons states (NATO allies) play a role in decisions regarding the use of certain U.S. nuclear weapons.

6. Excellent summaries have been written by Ben Dankbaar ("Alternative Defense Policies and the Peace Movement") and by Hans Brauch and Lutz Unterscher ("Getting Rid of Nuclear Weapons: A Review of a few Proposals for a Conventional Defense of Europe"), both published in Journal of Peace Research, vol. 21 No. 2, 1984 (pp. 141-155 and 193-199).

## DEFENSE ALTERNATIVES FOR WESTERN EUROPE

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By choosing to become nuclear-free except for an independent, submarine-based nuclear deterrent force, Western Europe could increase its security and pave the road for general disarmament.

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by Bent Sorensen

The post World War II armament history is one of a repeated introduction of new weapon systems. Although each new weapon system seen in isolation has increased the security of the nation or alliance deploying it, this is not true for the overall development. The reason is, that most of the weapon systems introduced have improved security by reducing the security of potential opponents. They have in turn introduced countermeasures to allviate the reduction in their level of security, and most often these countermeasures have again involved new weapon systems supposed to match those introduced by the other side. The effect of the countermeasures is therefore to reduce the security of the nation or alliance which first wanted to improve its security. The combined outcome is often that both sides become less secure after the introduction of each new weapon system and its counterpart. This description characterizes rather precisely the arms race between the United States and the Soviet Union (or between the NATO and Warsaw Pact alliances) during the last forty years. Many feel, that the security against nuclear destruction has dwindled to such a low level, that alternative directions in defense policy must be found now.

An obvious method is to look for defense alternatives, which will improve our security without deteriorating the security of the potential opponent. A number of such options will be described below. It is important to distinguish between actions, which can be carried out unilaterally and still meet the objective, and those which will not work without coordinated efforts from the opponent. As viewed from the smaller defense alliance members, there are really

three types of measures: those which a nation can carry out alone, those which require coordinated action by alliance members on one side, and finally those which demand negotiations between opponents, that is in the present situation between the two major defence alliances. Previous efforts have almost entirely been devoted to negotiated arms reductions, and although agreements have occasionally been reached (for example SALT I), they have never led to discernable improvements in security, but perhaps to a reduced pace of security reductions.

The risk of nuclear destruction is particularly acute in Europe, because the high concentration of opposed weapon systems in this region makes it dangerously possible, that any conflict between the superpowers may spill over into Europe. For demographic reasons, the destruction caused by even a limited nuclear war in Europe will be disastrous. In the light of this, it is not surprising, that Europeans in both East and West see the current coolness in U.S.-Soviet relations as a security threat, and that the smaller European countries on both sides are looking for ways of diminishing the linkage between their fates and those of the two superpowers. For this reason, defense alternatives aimed at improving West European security have been increasingly seen as entailing a disengagement of Western Europe from the interests of the United States. The difference between U.S. and West European goals and interests as concerns economic policy and global development policy has become more and more apparent, and the nuclear umbrella once offered by the U.S. as a protection of Western Europe against aggression has lost its credibility. No one any more believes, that the



U.S. would use its strategic nuclear weapons in a conflict as long as it seems confinable to Europe. Moving the entire NATO alliance towards an alternative kind of defense appears at present out of reach, but it is possible that the West European countries could themselves agree on a coordinated policy change. This would offer definite advantages over individual, national efforts, due to territorial connections and due to the cost reduction which could be achieved by sharing technology development expenses.

I first look at those defense alternatives for Western Europe, which can be implemented unilaterally, that is policies on which the West European countries would agree, or which at least would have the participation of most West European countries, but policies which have not been negotiated with the U.S. or the Warsaw Pact members. I describe four alternative policies, the results of which I call scenarios 2 to 5. They represent alternatives to the reference scenario (scenario 1) resulting from continued adherence to the current policy.

The current NATO force posture is based on a variety of conventional, nuclear and chemical weapon systems, designed to meet any type of or combination of enemy aggressions by a measured response, and the ability to control escalation step by step. This is more a doctrine than a description of the actual defense capability, because of serious technical flaws, particularly regarding the survivability of the command and control structure during a protracted war. The known deficiencies of the present defense system translate into concrete demands for future developments associated

with scenario 1: Creating less vulnerable intelligence gathering facilities that allow real-time analysis of data, introducing more independently targetable nuclear missiles of varying range, establishing missile defense protection of command structures, ground reception stations for satellite information, and political leadership. This is to be combined with an increasing number of both conventional and nuclear, offensive weapons aimed at destroying enemy command and control facilities, his back-up forces and his support infrastructure. The other side will of course act in reciprocity, so this type of scenario cannot have any "endpoint". It is a spiral of continued arms race, and it will lead to continuing mutual reduction in security, which as stated is the reason for seeking alternatives.

In scenario 2, all land-based and tactical nuclear weapons are removed from Western Europe by a unilateral decision. The conventional force posture remains similar to the current one. It is considered to constitute a strong deterrent against any conventional attack on Western Europe, and it is operational in case such an attack should nevertheless be attempted. The operational nature follows from the fact, that the current doctrine in addition to nuclear options does consider the possibility of a purely conventional fight, and trains the forces accordingly.

There is a finite chance, that a full-scale conventional attack on Western Europe by the Warsaw Pact members cannot be rejected by conventional forces alone. For this case, and for the case in which the enemy uses nuclear weapons against West European territory, there should be an ultimate

strategic nuclear deterrent available to the West European nations. Since the U.S. strategic nuclear weapons cannot be counted on in all circumstances, a sufficient strategic deterrence force must be at the disposal of the West European countries themselves. According to present estimates of the relative vulnerability of bomber planes and submarines, it would be most reasonable to place the independent West European strategic nuclear force on submarines. There are already some 270 such nuclear warheads, with 144 launchers on four British and five French submarines, and substantial enlargements and modernizations of these forces are planned by the two countries.

The two main questions related to the realization of scenario 2 are then how large the strategic nuclear force has to be to become a sufficient deterrent, and how the British and French submarine based missiles could become jointly operated as part of a future West European defense.

I would define "a sufficient nuclear deterrent force" as one capable of ensuring leadership destruction and unacceptable damage to any potential aggressor. Leadership destruction has been a rather controversial issue, although it is certainly incorporated in the war fighting plans of both alliances. Some would argue, that without enemy leadership there is nobody with whom ceasefire or peace can be negotiated. I would maintain that, since the strategic nuclear force would only become used if the war has turned nuclear, or if the West European conventional defense has been overthrown, then the conflict will anyway have passed the point where peace negotiations could be contemplated. Leaders engaging their populations in a war of such

dimensions could not hope to be forgiven by neither their own or the other side, so their elimination may rather pave the way for a new set of uncompromised leaders capable of negotiating fair terms of peace, than be an obstacle to such negotiations. The advantage of leadership threats is of course the direct deterring effect on precisely those people that would be responsible for attack decisions.

The second part of the deterrent effect of a strategic nuclear force of limited size would be achieved by targeting population centers and major facilities for production and economic transactions. The minimum size of such a deterrence force is difficult to estimate. For years, China seems to have been able to successfully deter the Soviet Union with just five intercontinental missiles. In the early 1960ies, Defense Secretary Robert McNamara in the United States calculated that 400 one-megaton bombs would constitute a sufficient deterrent, capable of killing at least a quarter of the Soviet population and destroying half of its industry. The present British and French submarines already carry three quarters of that number of bombs, but with smaller warheads (200 kiloton) on the British ones. France plans to add one submarine in 1985 and another in 1992. The first will have 16 launch platforms with 6x150 kt warheads, which cannot be fully independently targeted. In the United Kingdom, present Polaris missiles are being replaced by the Chevaline system, and four new submarines with Trident I or II missiles are planned, for introduction from the late 1980ies. It would thus seem, that scenario 2 does not require enlargement of the West European strategic nuclear program, but only a reorientation of its role.

The political problem of placing the existing strategic submarine force at the disposal of all Western Europe (or at least its NATO members) is still a formidable one. The experience with economic cooperation through the European Common Market is largely negative. After several years of existence, the Common Market has achieved nothing more than eliminating the market forces in the field of European agricultural products, by means of elaborate schemes of producer support, and it has created a new pampered bureaucracy, but has not been able to change the political process away from one, in which each member state pursues its own nationalistic interests irrespective of any gain that could have been obtained by focussing on the overall benefits for the European community.

Ideas of a closer defense cooperation have been forwarded by French and West German politicians. In 1984, former West German Chancellor Helmut Schmidt proposed to the French Prime Minister Francois Mitterand, that the French strategic nuclear force should automatically become released by a nuclear attack on West Germany as well as by one on France. In return for this extension of the French "nuclear umbrella", West Germany would increase its conventional army, so that the French and German armies could alone withstand any conventional attack, without having to rely on United States or British forces. The smaller Common Market nations have been opposing this kind of defence union, because they fear that they would lose any say on defense matters, and of course because they are influenced by centuries of European history characterized by French and German aggressions.

On the other hand, the dissatisfaction with the present kind of defense relying on battlefield nuclear weapons unable to defend without destroying what they were supposed to defend, may make the European nations more open to a proposal, which totally eliminates such weapons. A condition should be that there are clear rules as to the situations, in which the commonly owned (or at least commonly operated) strategic nuclear weapons should be released. If these rules are clear and the response automatic, then decisions regarding use of the nuclear weapons would not have to be made during the hectic period following an actual attack. This is an important point for the smaller West European countries, because they may otherwise fear that important decisions could be made without them being heard. As for the willingness of France and the U.K. to let their submarine-based strategic nuclear weapons overgo to a broader mission, the rather positive reception in these two countries of the Schmidt plan would indicate, that this is not quite out of line with realities. Yet there are bound to be hard political debates in each country over the whole issue, and the problem of the future of NATO and of the nations not presently members of either NATO or the European Economic Community are bound to come up.

The driving argument in favor of scenario 2, which may overcome all the objections, is of course that Western Europe will become much safer against nuclear destruction, with the "side effect" that the Soviet Union will also become more safe. As for non-nuclear offences, the level of safety will at least not be deteriorated.

The third scenario is based on the point of view, that

not only is the present nuclear posture in Western Europe unrealistic, but also the conventional force posture is problematic, because of its very offensive character. Also the Warsaw Pact side has a very offensive, conventional posture, in addition to large quantities of tactical nuclear weapons integrated with the conventional forces. Indeed, there has been an arms race on conventional weapons no less intense than that on nuclear arms. The latest escalation has been associated with the adoption of a "deep strike" doctrine, first as an agreement between the United States and West Germany, but in 1984 extended to become an official NATO policy (termed "Follow-On Forces Attack"). It calls for the ability to identify the location of second and third echelon enemy forces by real-time intelligence analysis, and then to attack these forces by deeply striking (non-nuclear) missiles or air raids. The Soviet Union has responded by the introduction of a new interceptor airplane (MIG-31) claimed to possess "anti-deep-strike" capabilities, and by increasing its numbers of fighter-bombers and attack helicopters.

The spiralling nature of the conventional arms race makes it natural to look for actions analogous to those introduced in scenario 2 as regards nuclear arms, which can improve security against conventional attacks without reducing the security of the opponent. A number of such proposals have been put forward in Western Europe, using terms such as "territorial defense" or "non-offensive defense". They may be categorized as either a "border defense" or an "area defense". A border defense may consist of a fire-barrier zone extended all the way along the East-West German border,

while an area defense may be based on decentralized units armed with precision guided munition (to use against enemy tanks or planes), essentially covering all of the West European territory. Because the material is light, some mobility can be achieved by using civil vehicles such as bikes, motorcycles or light trucks. Too much mobility is, however, to be avoided, in order that the enemy does not see the units as a potential invading force.

A criticism against border defense is that the enemy may sit at a safe distance from the border (on his side) and shoot missiles of suitable range against any important target within the territory guarded by the fire-barrier, until the morale gets sufficiently low for coercive demands to become accepted. The common criticism against area defense is that fighting and destruction will take place on one's own territory, and that such a defense is ill suited for chasing an enemy out of the territory, once he is in. Both of these criticisms would seem invalid for a territorial defense combined with a practically invulnerable strategic nuclear deterrent force, because the threat of using the strategic force if the enemy does too well or refuses to withdraw will in the first place deter the enemy from attacking, and in the second place force him to withdraw from untenable positions. Should the enemy invasion be successful, the automatic release of the submarine-based strategic arms will plainly take place. It is precisely in order to make this retaliation credible, that a high degree of automatism will have to be built into the launch conditions.

The fire-barrier concept was developed for countries with



borders, which due to mountains or other terrain features, could be penetrated by an invading force (assumed to employ tanks) only in a limited number of places. Nations with open land borders and nations surrounded by sea (which would be invaded from landing ships) could not easily use this concept. Scenario 3 assumes the area defense option with modest mobility to be a suitable solution for all the West European countries, in combination with their independent strategic nuclear force. Coordination between units of the highly decentralized defense would make use of the subterranean network of light guides and cables installed or being installed by many West European countries at present. These communication systems allow a high density of information to be transmitted, and they could in wartime serve as control and command channels for a highly decentralized leadership, allowing full cross-communication and the conduction of well coordinated actions. At the same time, this system exhibits lots of redundancy and a substantial invulnerability, making both it and the dispersed leadership very difficult to target.

Scenario 3 offers as much security against nuclear destruction of Western Europe as scenario 2 does. The Soviet block will be more secure against attack in scenario 3, and initially, unilateral execution of scenario 3 is likely to make Western Europe more secure against Warsaw Pact invasion and occupation than scenario 2. If the Soviet Union maintains its mixed conventional and tactical nuclear posture against Western Europe, it may with time be led to think that Western Europe might not, after all, use its strategic nuclear arsenal after a quick and successful

invasion of its territory by the Warsaw Pact. However, the hope associated with both scenario 2 and scenario 3 is of course, that the Warsaw Pact will respond in reciprocity by unilateral withdrawal of all tactical nuclear weapons near the European scene, and later by modifying its conventional posture in a less threatening direction.

Scenario 4 assumes a territorial defense but no nuclear weapons whatever. The purpose of a non-nuclear defense is clearly to remove any purpose that an enemy may conceive for using nuclear weapons against one's territory. In order to become credible, the territorial defense would have to be more mobile than the one considered in scenario 3, so that it may not only wait for an invading force, but also engage in active pursuit of such a force, in order to regain lost territory.

If scenario 4 were embarked upon as a unilateral measure by Western Europe, it is not even sure, that the security against nuclear destruction would increase, because the opponent could use his nuclear arms without fear of retaliation. Also the security against conventional invasion and occupation by foreign forces is uncertain. Territorial defense has never been tried in practice, and if it should fail, there would not in scenario 4 be any nuclear deterrent to back it up.

However, scenario 4 would become an interesting option for Western Europe as a continuation of scenarios 2 and 3, once the Warsaw Pact is assumed to have responded by eliminating its land-based and tactical nuclear weapons. It would be a natural move from denouncing nuclear weapons in

the battlefield, to denouncing such weapons under all circumstances. This move would have to take place in all nuclear states at approximately the same time, presumably as a result of negotiations. The situation would be different from that of previous negotiations on nuclear arms reduction, because the preceding reciprocal removal of battlefield nuclear weapons would greatly enhance the chances of success in such negotiations.

The fifth scenario is one, in which Western Europe chooses to spend its current military budget on international conflict prevention. This could be in the form of assistance to regions with social problems, and by undertaking an initiating role in promoting better understanding and furthering negotiations between the superpowers and between any aggressive regimes or movements of international relevance. Another method could be the use of sanctions in the form of political or economic pressures levied against nations unwilling to move in the direction of peaceful and equitable coexistence.

Western Europe would in scenario 5 develop a non-military defense. Should international pressures be insufficient to prevent foreign invasion of West European lands, then non-military (but not necessarily non-violent) actions would be directed against the occupying force, including civil disobedience and guerilla activities.

As a unilateral measure, historical evidence does not warrant much optimism regarding such demilitarization. One possibly relevant example is that of Japan after World War II. It has been (forced to be) more or less demilitarized

despite the upcoming of strong military powers close to its territory. However, it did have a firm defense guarantee from the United States, as well as military bases on its soil. Presently, the U.S. seems to be urging Japan to resume more responsibility for its own defense. Western Europe could hardly expect a defense guarantee from the U.S., in case it rejected the military defense philosophy upon which the NATO alliance is formed. One might expect that demilitarization of Western Europe would totally eliminate the risk of nuclear destruction, but would increase the possibility of foreign occupation. However, the demilitarization process proposed in scenario 5 would clearly become stretched over a prolonged period (decades), and if the potential aggressors (notably the Soviet Union) showed signs of offensive intent or made attempts to exert political pressure, then the demilitarization process would surely become reverted, at least for a period. The risk of invasion would thus primarily be associated with either concealed intents or with sudden change of intentions (for instance in connection with Soviet leadership change).

The prospects for achieving peace through demilitarization would be greatly improved, if it could be turned into a global process, involving first reciprocity from the Warsaw Pact members, and later from other countries including those of the Third World. At present, no signs of willingness to embark of this route are visible.

Pictures of the Soviet Union as an invader of Western Europe are common in NATO rhetoric and in French justification of France's nuclear arms. In reality, Soviet

intent to invade Western Europe as an isolated act must be considered as virtually absent, despite the dreams of expanding its sphere of influence, seeming to be an attribute of any superpower. A more likely cause of a war which affects Europe is the spill-over of conflicts in other parts of the world, and most likely in neighbouring parts such as the Middle East. If both NATO and Warsaw Pact countries were to interfere in a local conflict in the Middle East, the hostilities could develop in a way, which led the Soviet Union to think, that a war with NATO would be unavoidable, and it might then seek the advantage of striking first. An obvious way to avoid this would be for the NATO countries to remove the causes, which call them to want to interfere in a local conflict. Chief among these causes is the access to oil from the Middle East, while present mineral supply from Central and Northern Africa is easier to substitute. If Western Europe made itself independent of oil supply and other raw materials from war-prone areas, it would be much less likely to become drawn into a conflict that could evolve into a war in Europe. The same is true for the United States, although its reasons for interfering might be a mixture of resource supply considerations and superpower interests. Western Europe would gain additional security by disengaging itself from such superpower interests. Some independence as regards Middle East oil has already been achieved by West European exploration of oil and gas fields in the North Sea. Additional independence could be gained by pursuing some of the potential demonstrated to be associated with more efficient use of energy. Furthermore, use of renewable

sources of energy in combination with controllable flows of energy based on North Sea resources could lead to a very resilient energy supply system in complete indigenous control. The nuclear energy alternative has some of these advantages, but it is vulnerable in a war situation, as is North Sea oil and gas fields but not dispersed renewable energy systems.

Viewed as unilateral policies, the scenarios considered above become increasingly uncertain with increasing scenario number, as regards their security implications. The actual policy could then be one of immediately moving from scenario 1 to scenario 2, because this will improve security already as a unilateral step. Western Europe could then wait and see, if the Warsaw Pact would similarly remove its tactical nuclear arms from the European scene. Without such a gesture of recognition, it would be difficult to argue for the reorganization of conventional forces into a less offensive posture. On the other hand, if both West European and Warsaw Pact battlefield nuclear weapons were out of the way, then Western Europe could seriously consider, whether scenario 3 should be effectuated unilaterally, or a balanced removal of offensive defense components should be sought through negotiations between Western Europe and the Soviet Union and its East European allies.

The reciprocity of the Warsaw Pact would be a condition for contemplating a move from scenario 3 into scenario 4. The security implications of scenario 4 are such, that it is difficult to envisage it to be carried out unilaterally. While a reciprocated scenario 3 creates a nuclear-free zone

throughout Europe, scenario 4 requires the removal of all types of nuclear arms. This affects the balance of strategic arms between the Soviet Union and the United States (and other nuclear powers), and negotiations would thus have to involve all the nuclear powers. The aim would be total nuclear disarmament. Finally, any consideration of scenario 5 would be unrealistic, unless total nuclear disarmament were already achieved, and even then it would have to be based on carefully negotiated understanding, first of all between Western Europe and the two superpowers, but ultimately between all nations in the world. Guarantees of national sovereignty would have to be provided, for instance through an upgraded United Nations institution. The issues involved are very complex due to the possibility of rapidly emerging belligerence in some regions, and a detailed discussion of these issues would seem premature until the shape of a global community having successfully transformed through scenarios 2 to 4 has become visible.

Steps that could and should be taken at an early stage are those of reducing international arms trade. The industrialized countries know, that the economic gains from military production are usually smaller than for civil products (as seen from the point of view of society, not the point of view of the individual arms manufacturing enterprise, of course). The arms import by Third World countries in part prevents them from entering a path of social development, and in part leads to more frequent conflicts and more serious conflicts, which as mentioned may spill over into the (arms exporting) industrialized countries. Third World armament may thus soon become a

serious obstacle to the kind of development contained in the successive scenarios discussed above, and Western Europe would, in order to progress along these lines, have not only to curb its own arms export, but also to try to influence the superpowers to give up their arms exports, and to induce Third World countries not to engage in arms production or import. Differentiated trade conditions could serve this purpose, for instance by rewarding non-belligerent trade partners and severing relations with belligerent ones.

Finally I shall comment briefly on the costs of the five scenarios. Scenario 1 involves persistent real term increases in military expenditures. The expenses associated with the capability to wage protracted nuclear wars are estimated as requiring a 3 pct. annual increase in NATO expenditures. The missile defense and space war efforts are additional expenses incurred by the U.S. The FOFA ("deep strike") plan is estimated to involve an additional 3-7 pct. annual increase in NATO budgets. Since scenario 1 is based on the continuing upcoming of new such expenses, it is clearly an untenable long-term policy. Soon the military expenditures will be the largest item on national budgets, and eventually they will exceed total incomes. For this reason alone, alternatives to scenario 1 must be found.

Scenario 2 has a stable cost if one accepts the argument, that expenditures on conventional defense will not have to increase, as long as the nuclear deterrent is in place, and that a "sufficient deterrent" is a quantity not increasing with time. The latter assertion is quite a reasonable one, because the deterrence force is not defined in terms of



enemy strength, but in terms of fixed damage objectives. It could be modified, however, if the other side found an effective missile defense for its cities, or were able to introduce significant improvements of leadership protection.

Both scenarios 2 and 3 have savings associated with abandoned types of nuclear arms, but scenario 3 may have additional conventional force expenditures, if the area defense should turn out more expensive than the present one (an issue hotly debated, but in my view still quite open). Scenario 4 is less expensive than scenario 3, and scenario 5 by definition has a fixed cost derived from whichever alternative that is chosen as a reference.

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THE FOLLOWING ARE SUGGESTIONS FOR ILLUSTRATIONS AND/OR  
INSERTS:

**BOX 1:**

-----  
**DEFENSE POLICY OPTIONS:**

- A. Unilateral actions
  - B. Alliance coordinated actions
  - C. Opponent negotiated actions
- 

**BOX 2:**

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**THE FIVE SCENARIOS**

SCENARIO 1 is a straightforward continuation of the current nuclear and conventional force posture. All types of arms are considered necessary, in order to be able to meet any combination of aggressions with a measured response and to control escalation from local conflict to situations with employment of NATO reinforcement, nuclear battlefield weapons and ultimately strategic nuclear arms.

SCENARIO 2 maintains the conventional part of the NATO defense, but unilaterally removes all land-based and tactical nuclear arms from Western Europe, including those owned by the United States. The submarine based strategic missile force of France and the United Kingdom is developed into a common West European strategic deterrence force strong enough to ensure leadership destruction and infliction of unacceptable damage upon any aggressor. It would be used if the aggressor uses nuclear arms against Western Europe or fares too well against its conventional defense.

SCENARIO 3 has an independent West European strategic nuclear force as in scenario 2, but a conventional defense with low mobility and based entirely on short-range weapons (an "area defense"). High-technology command and control facilities combined with precision guided munition should make this kind of defense effective against an invading force, even one that is strong in numbers, tanks and combat aircrafts. Still, the strategic nuclear weapons remain as the ultimate deterrent. SCENARIO 4 is one without any nuclear defense of Western Europe. A territorial defense of the type described in scenario 3 is employed, with back-up plans for dealing with successful invaders (civil disobedience, guerilla warfare, etc.). The non-offensive area defense is to be somewhat more mobile than in scenario 3, in order to be able to chase an enemy and force him out of the territory.

SCENARIO 5 proposes a non-military defense. Its basic idea is to spend the money saved by not having a military defense on international conflict prevention. Should this fail to prevent invasion and foreign occupation, the measures described in scenario 4 would be employed.

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BOX 3

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**PROPOSED DEFENSE PLAN:**

1985-1995: Western Europe unilaterally removes land-based and tactical nuclear weapons, and agrees on the operation of a common strategic nuclear force placed on submarines.

1995-2001: The Warsaw Pact in response removes its tactical and intermediate range nuclear weapons from the European scene, and a transformation of West European forces into a non-offensive area defense is initiated.

2001-2009: Negotiations on the removal of all nuclear arms are undertaken, with participation of all nuclear powers, and an agreement is finally reached.

2009-2015 and beyond: Negotiations on total disarmament are initiated, involving more and more of the worlds nations. Stepwise arms reductions in all areas of weaponry is the result one hopes to see emerge...  
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# PRESENT FORCE PICTURE

	US	WE	EE	SU	C
Soldiers (thousands)	2050	2800	1000	2800	4400
Tanks	8000	12000	13500	40000	?
Combat aircrafts 1	4000	3400	2200	4350	3800
Combat helicopters	9000	?	?	2000	300
Strategic bombers	500	(0)	0	190	80
Combat surface ships 2	240	250	3	400	40
Submarines	125	23	4	370	93
Landing ships 3	?	210	25	246	31
Economic & technol. threats	none	(US)	WE	US & WE	(Japan)
Normative threat	none	(SU)	WE	US,WE,(EE)	(Japan)
Firepower	large	large	large	large	sizable
Command & control capability	very high	very high	high	high	modest
Nuclear missile warheads 4 :					
Short range (100-1000 km):					
Ground launched	600/600	1100	-	-/700	-
Air launched	1800/1800	600	-	-/3000	-
Ship launched	0	10	-	-/700	-
Medium range (1000-3000 km)					
Ground launched	0/50	0	-	-/0	100
Air launched 5	0/300	146	-	-/700	>200
Ship launched	400/100	0	-	-/60	0
Long range ( > 3000 km)					
Ground launched	2100/0	20	-	4000/1000	5
Air launched	3600/0	0	-	400/500	0
Ship launched	5300/400	272	-	1000/0	0
Chemical Weapons 6	35 kt	-	-	> 100 kt	-

#### FOOTNOTES TO TABLE

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- 1 Excluding a similar number of support aircrafts.
  - 2 Excluding patrol boats and other minor vessels.
  - 3 Some of those listed for WE belong to the US.
  - 4 Excluding spare or reload warheads. The number following the slash pertains to weapons stationed in WE (for US) or EE (for SU).
  - 5 Some such warheads may for the US appear as short range.
  - 6 Some deployed in WE (for US) or EE (for SU).
- 

US=United States, WE=Western Europe, EE=Eastern Europe, SU=Soviet Union and C=China.

## FIGURE LEGENDS

NUCLEAR DESTRUCTION OF WESTERN EUROPE. The trends in estimated capability of potential aggressors to accomplish nuclear destruction of Western Europe, and their intent to do so (top frames) are used to evaluate West European security against such destruction (lower frame). The measure of security is simply taken as one over the product of enemy capability and intent. The model covers the past period 1945 to 1985, and evaluates each of the five alternative defense scenarios described in this article, for the period 1985 to 2000 (labelled by scenario number). In this graph, each alternative has been assumed to become realized unilaterally by the West European countries. The effect of negotiated reciprocity by the potential aggressor countries is illustrated in the proposed defense plan ( Fig. 3 )

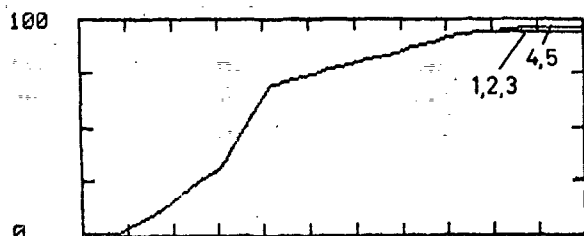
FOREIGN OCCUPATION OF WESTERN EUROPE. This illustration is similar to the previous one, except that foreign occupation is considered instead of nuclear destruction.



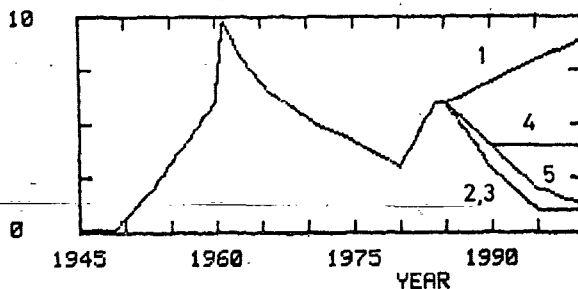
# NUCLEAR DESTRUCTION OF WESTERN EUROPE

Model basis:

ENEMY CAPABILITY  
(ARBITRARY UNITS)



ENEMY INTENTIONS  
(ARBITRARY UNITS)



Model inference:

SECURITY  
(ARBITRARY UNITS)

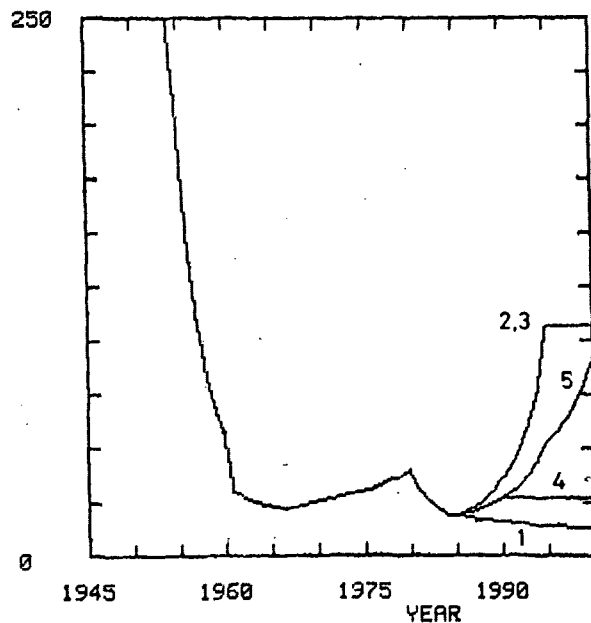
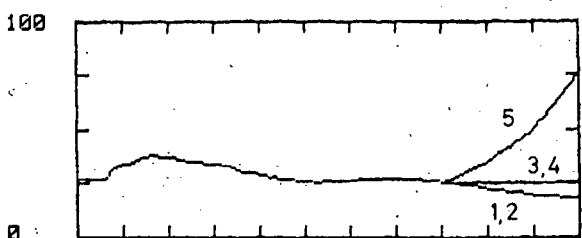


FIG. 1 Numbers refer to scenarios

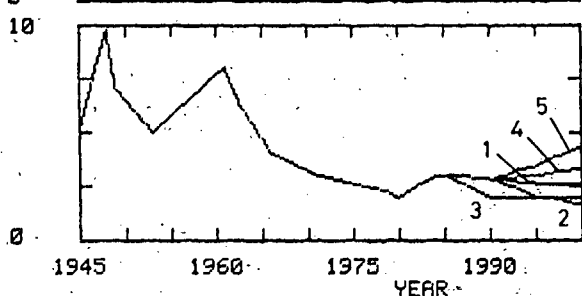
# FOREIGN OCCUPATION OF WESTERN EUROPE

Model basis:

ENEMY CAPABILITY  
(ARBITRARY UNITS)



ENEMY INTENTIONS  
(ARBITRARY UNITS)



Model inference:

SECURITY  
(ARBITRARY UNITS)

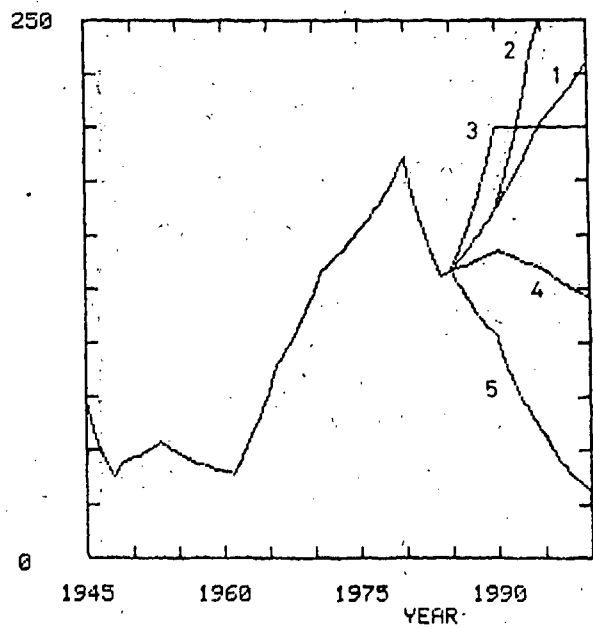


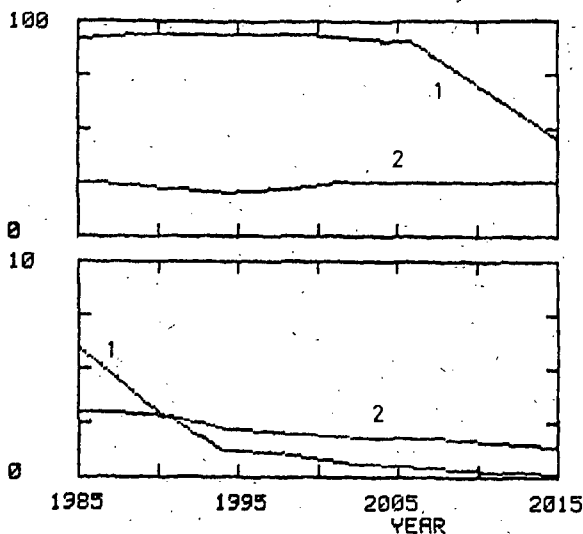
FIG. 2 Numbers refer to scenarios

PROPOSED DEFENSE PLAN. The gradual development associated with successively moving from the present defense posture through alternatives 2 to 5 is illustrated by changes in enemy capability and intent, and hence in West European security. In period A, Western Europe unilaterally removes tactical nuclear arms. In period B, the Warsaw Pact agrees to transform Europe into a nuclear-free zone and Western Europe starts to modify its conventional forces into an area defense. In period C, nuclear powers negotiate the removal of all nuclear arms, and in period D negotiations on general disarmament follow successful agreements on elimination of nuclear arms.

# PROPOSED DEFENSE PLAN

Model basis:

ENEMY CAPABILITY  
(ARBITRARY UNITS)



Model inference:

SECURITY  
(ARBITRARY UNITS)

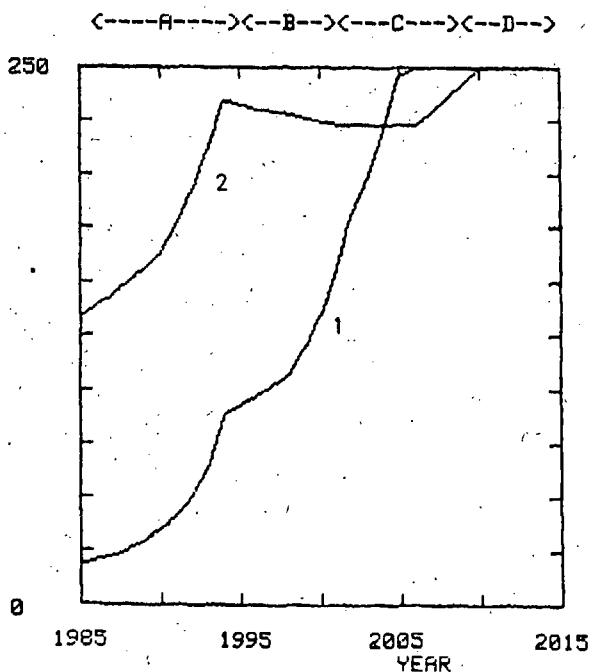


FIG. 3.  
1: NUCLEAR DESTRUCTION  
2: FOREIGN OCCUPATION

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